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ABSTRACT

Parent/infant bonding is discussed in this study review. Bonding is defined prior to a discussion of research that places the concept in historical perspective. The discussion of research since 1950 focuses on Bowlby, Klaus and Kennell, Helfer, Mahler and Rheingold, and Brazelton. Attention is given to the capacities of the newborn, child abuse, the sensory system of the infant, the use of volunteers in perinatal coaching programs, neonatal assessment, and the father's role in the development of parent/infant attachment and subsequent family relationships. The current status of bonding is subsequently discussed in terms of the socialization of the infant, the contribution of affective development to attachment, and dimensions of attachment and conditions affecting the development of attachment. Concluding remarks view parenting and parent/child relationships as they are likely to be influenced by the social trends and problems of the 1980's. A three-page bibliography concludes the document. (RH)

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ASPECTS AND IMPLICATIONS OF PARENT-INFANT BONDING: PATHWAY TO THE '80's

ED266866

A STUDY REVIEW

In Partial Fulfillment of the Requirements

for the Degree of

Master of Education, Counseling

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By

Carol H. Brice, B.S.

Fairbanks, Alaska

December 1983

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PROPOSAL

The past twenty-five years have generated considerable interest in the field of parent-infant bonding. It has been theorized that the formation of an early parent-infant bond is imperative for subsequent cognitive, emotional, and social development of the child. This ideology has come to be challenged in recent years, at a time when child abuse and neglect prevention is focusing on innovative programs in perinatal intervention.

Has the recent trend of parent-infant bonding shifted emphasis from a theory of critical attachment to a more optimistic developmental theory, and what are the implications for the '80's?

In a study review, I intend to present the concepts and challenges in a chronological frame, and, based on the most current research, generate some useful projections. This will be accomplished by:

1. a review of the literature related to parent-infant bonding.
2. direct inquiry into current research through attendance at two professional conferences.
   a. "Tenth Annual Perinatal Symposium", Anchorage, Alaska, March, 1983.
   b. "Affective Development in Infancy", Harvard University, Boston, Massachusetts, May, 1983.
3. participation in a practicum, Child Development Unit, Children's Hospital Medical Center, Boston, Massachusetts, May, 1983.
4. dissemination of information and stimulation of discussion related to the current trend in parent-infant bonding/attachment to Fairbanks community health professionals and volunteers.

Further, I intend that this study will enhance my ability to assist with the design and implementation of a combined parent aide/perinatal coaching program through the Resource Center for Parents and Children, beginning January, 1984.

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DEFINITION

In discussions relating to family relationships, bonding is perceived as an emotional attachment between parent and child, having sequential implications for the full development of the child's physical, social, emotional, and intellectual potential. While mother-infant attachment occurs in many animals as well as humans, bonding in humans occurs in very specific and complex ways. It is two-way: mother to infant and infant to mother. There is a common misconception that bonding must take place between parent and infant shortly after birth, or the opportunity for future attachment is lost. In essence, the incipient bond is now thought to have its developmental beginnings at the time of decision for conception, with relationships during pregnancy and throughout childhood enhancing the potential for the parent-infant bond.

HISTORICAL PERSPECTIVE

Prior to 1920, the infant was generally not thought of as worthy of research, nor as a contributing factor in consideration of family dynamics. John Locke, late in the seventeenth century, "...saw the newborn child as being similar to a blank slate upon which experience would write."[30] In the next century, Jean Jacques Rousseau asserted that infants had no capacity for learning or for memory, so time spent teaching was time wasted. Throughout the next century, the child was not much more than a "fixture" that required physical care-taking, unless he was employable and useful to society. In the 1920's, it was Freud and Watson, working in the mental health field, who first emphasized the paramount importance of the first years of life. Watson noted that "...parents, whether they know it or not, start intensive training of the child at birth."[30] However, he negated the value of holding, cuddling or rocking babies, seeing it as wasted time that could be better put to instructional use. He, along with others, advised mothers to refrain from showing their babies too much personal attention. It was better to allow the infant to cry than risk "spoiling".

This "leave well enough alone" policy of the 1930's and 1940's was based on the assumption that a child's natural environment was generally quite adequate to nourish early development. The pattern of rigid scheduling, which had heretofore been reinforced by the behaviorist psychologists, was modified to a more flexible approach. Mothers were advised to relax and to respond to individualized needs and requirements of the infant, recognizing perhaps for the first time that infants are unique, and invite individualized response.

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As early as the 1930's, K. Z. Lorenz was involved in behavioral research with birds and animals. His demonstrations of imprinting and attachment were influential in the development of a "critical period" concept, which carried over into later research on parent-child relationships. Mothers were warned that failure to "bond" with their newborn infant right after birth would possibly result in irreversible physical, social or emotional problems in the child. Though it is now recognized that there is neither a "critical period" nor irreversibility, the imprinting studies of Lorenz and others laid a strong foundation for the bonding concepts of the next decade. Another dimension was added in the 1940's with researchers such as Spitz, who wrote the pioneering article on the topic of mother's absence. Others, too, were struck by the condition of infants who had been separated from their mothers, due to illness, premature delivery, choice, and/or other such factors.

CONTRIBUTIONS SINCE 1950

John Bowlby's report to the World Health Organization in 1951 focused wider attention on the problems of separation of mother and infant. He discussed the attachment qualities of a parent-infant relationship, and the biological functions of same. In essence: "What is believed to be essential for mental health is that the infant and young child should experience a warm, intimate, and continuous relationship with his mother".[6] Bowlby's report was timely. Since World War II, there had continued to be a gradual shift of emphasis away from acceptance of the environment as the chief shaper of child development, toward the importance of the individuality of the infant and his capacity to develop social relationships. This led to improved methods of child care, and stimulated both controversy and further research. The terms "social attachment", "affectionate bond", and "dependency" were being used interchangeably by those who were working to further develop early socialization concepts. Both in clinical and non-clinical settings, observations and research were focusing particularly on the importance of the early parent-infant relationship. In Cleveland, Dr.'s Marshall Klaus and John Kennell were particularly interested in their observations with premature infants. They noted that, despite heroic efforts to save their lives, many of these infants returned to the hospital for treatment of conditions related to abuse or neglect. A frequent diagnosis was failure to thrive, where the infant fails to grow and develop normally in an environment devoid of maternal physical and emotional nurturing. The results of their studies showed that these early separations often interfered with the bond that usually formed under more natural circumstances. Even in the absence of abuse or neglect, these infants were often observed to be fussy or

colicky babies who were not easily soothed or comforted.[31] In publishing their findings, Klaus and Kennell stated that "the original mother-infant bond is the well-spring for all the infant's subsequent attachments, and is the formative relationship in the course of which the child develops a sense of himself. Throughout his lifetime the strength and character of this attachment will influence the quality of all future bonds to other individuals."[28] They particularly emphasized that the first minutes and hours of an infant's life with the parent are essential in the attachment process. These reports did help focus concern on the psychological needs of the young child, by emphasizing the importance of an early nurturant environment for the infant's healthy development. Observers and researchers working in the early '60's tempered the importance of the "critical period", and focused attention on the value of synchronous interaction, and development of a mutually satisfying relationship. This research gave rise to innovative changes in obstetrical units, such as rooming-in, which allowed early and prolonged contact between mother and infant. This has remained an important choice for parents to this day. While the movement to reinforce parents for early attachment was gaining momentum, Dr. Ray Helfer, a pediatrician and faculty member at Michigan State University, was reinforcing the concept with his concern for parents and infants, specifically in the perinatal period. An outgrowth of his concern was the development of an intervention program that would enhance parenting skills and promote positive parent-child relationships. His program was based on an accumulation of knowledge that had been collected in the '70's, concerning infant capabilities. Basically, studies were conclusive that, at birth, the newborn is primed to continue the mutual interaction with the mother which began during intrauterine life. Both biological and biochemical factors have prepared him for

life in a world of social relationships. In essence, he is equipped to sense people. Helfer was quick to recognize, however, that many parents are handicapped when it comes to initiating social interaction with their newborn infant. They lack not only skills, but positive parenting experiences and access to supportive resources. For parents who do possess these attributes, early training is an opportunity for enrichment, for enhancement of parenting skills, and for strengthening of intrafamily relationships. Perinatal intervention, Helfer maintained, would enhance the developing parent-infant attachment, which would have a positive effect on the child's future development. Helfer also anticipated that early intervention might lead to progress in the prevention of the harmful effects of child abuse and neglect, a problem which had attracted national concern by the late '60's. Statistically, it was known that this social and medical problem affected many thousands of children annually from all social strata. Ten years ago, 4% of the population was aware of the seriousness of the problem; in 1978, the awareness level was raised to 34%. Today, it is safe to estimate that probably 85% of our population is cognizant of the seriousness of the problem. But recognition is no longer the focus of concern; prevention is the primary goal today. It was in considering prevention that Helfer focused his concern on the abnormal practices that exist in a large cross-section of the population. He felt that these were primarily due to one, or a combination of the following: (1) lack of education concerning the communication potential of the newborn infant; (2) experienced undesirable parenting practices during their own childhood; (3) high levels of stress; (4) lack of encouragement for father-infant attachment; (5) unreasonable high expectations of infant development; (6) raised in a sensory-deprived atmosphere; and (7) lack of experience in the skills required to initiate two-way communication.[20] It

was on the basis of this that Helfer developed his "Perinatal Coaching Program" in 1968, focusing primarily on primary prevention through supportive intervention. The educational program, which is still in modified use today, trains volunteers to teach newborn social potential to first-time parents. Through slides, scrapbook, and home-based visiting over the course of three visits, the parents learn the following:

In his earliest stages after birth, an infant is in a state of consciousness that is all sensation. There is no capacity for thought in the sense of reason, conscious memory, reflection, or judgement. The senses develop in a sequential pattern: first, the proximity senses, or those requiring the nearness of some object to operate effectively; then the distant senses, those which help with perception of distant objects. The sensory system has functioned to a very limited extent in utero. Touch is the first and foremost of the proximity senses to develop, but until a few years ago, there was little understanding of either touch or movement. Sensitivity to touch has been demonstrated as early as nine weeks after conception, as the embryo is seen to move away from stimulation. Later in the pregnancy, there is reflex action in response to the touch of the umbilical cord, or a finger, or an artificially induced probe. Rather than avoidance, there is evidence that this later movement occurs in the direction of the stimulation, as if the fetus were seeking to explore the source of touch. The surrounding fluid in the uterine sac gives the baby a gentle squeeze from time to time, as the uterus contracts. This gentle pressure is similar to the effects of gentle touching or massage by the parent. After birth, when mother and infant meet for the first time as separate individuals, the feeling of skin on skin and the soothing stroking of the infant firmly establishes the beginnings of the maternal-infant bond. Skin sense is one of the most

developed and most fundamental functions of the body. Being wrapped in material that is furry, or has a fuzzy surface, is more soothing than a smooth surface. Also, "stimulation of the skin --- handling, cuddling, rocking and massage --- increases cardiac output, promotes respiration, and develops the efficiency of the gastro-intestinal function of the human infant."[34]

Proprioceptive-vestibular responsiveness is another interactive quality of newborns. Infants are seen to be quieter, and tend to be soothed more quickly if lifted, shouldered, touched, rocked or similarly handled. In relation to holding, researcher Lee Salk observed that mothers tend to hold babies on the left. Classical paintings also depict the infant on the mother's left. In that position, the head of the baby is close to the mother's heart, and the sound of the heartbeat is comforting.[31] This observation helps substantiate the notion that infants do seem to carry some kind of memory of life inside the womb.

Taste and smell are the other two proximity senses, both of which are functional at birth or shortly thereafter. The ability to discern odor is part of the newborn repertoire, and compensates for the absence of early visual recognition of parents. Recognition has been demonstrated in six day old infants who will selectively choose their mother's breast pad over that of another woman, and they will turn away from offensive odors.

In consideration of distant senses, new research contradicts the previously held notion that babies can neither see nor hear at birth. Even in utero, the infant's auditory capabilities are known to be functioning. He hears the mother's heartbeat and the sounds of her body digesting, snoring, laughing, singing and coughing. He hears her voice, and the voices of other people. He is undisturbed

by these muted sounds. It is of interest that unborn infants react to both high and low frequencies, some so low that they cannot be appreciated by the human ear.[31] After birth, the infant can differentiate sounds to an impressive degree. He will turn toward sound and attempt to fix his gaze on the source. He has shown selectivity for the sound of the human voice, more specifically, for the mother's high-pitched sing-songy voice, which acts as a stimulus for the infant.

Very little is known about what, or how much, the unborn infant sees. There is evidence, however, that late in pregnancy, some light passes through the uterine and abdominal wall as they become stretched and thin. This glow of light dispersed in the amniotic fluid allows for periods of light and dark, depending on the mother's exposure to light.[31] Also in the uterus, eye movements are made in response to body movement and during dreaming sleep, and seven months after conception, the pupils react to light and dark. In the first few hours after birth, babies born to unmedicated mothers have an incredible capacity for alertness. Their eyes are shiny bright, wide open, and capable of focusing and fixating on an object, though distance vision is only about 20/500. Movement of the eyes at birth is coordinated with movements of the head, so the capability of tracking a moving object, especially a face, is present at birth. Newborns can only briefly coordinate the movement of both eyes at once. The infant gaze is like a magnet. Mothers will shift the newborn infant around to arrange a face to face confrontation, as if searching for a signal to initiate social interaction. It is this visual attentiveness that seems to matter most to babies, as they particularly respond to human characteristics. Studies have shown that newborns focus only on certain distances, and that visual acuity is sharpest in the 8" to 12" range, the usual distance of

the mother's face from her nursing infant. Recognition for the mother probably does not develop until around the third month. Early peripheral vision is purposefully underdeveloped, to allow the infant a greater focusing capacity. There is a visual preference for patterned surfaces, bright colors, complexity and three-dimensionality. While he has not developed the sophistication that will develop in the first couple of months, there is no doubt that the infant responds to a mask with only eyes that is held 8" to 12" away, and he preferentially selects round, human-like faces that are pleasant and smiling in contrast to those that are unpleasant and gruff.

Rhythmic body movements are also a part of the infants non-verbal response to communication, and an important stimulus to interaction. Newborn movements synchronize with the rhythm of the human voice, and the infant may even attempt to initiate facial gestures, such as sticking out a tongue. Such a vastly sophisticated infant communication system appeals to the interactive potential in every human being, and plays an important role in the development and maintenance of attachments.

But parents must be cognizant that communication is a two-way process, and Helfer felt that failure to bond was often related to deficient communication skills. Though most adults, especially mothers, find the sensory system a comfortable and natural way of communicating, for others sensory communication is uncomfortable. Men, in particular, have been functioning in the cognitive, verbal and written world. Women who have delayed parenting until their later child-bearing years, are also oriented to the cognitive world. Others who attempt to parent come from less nurturing or abusive backgrounds, and sensory communication for them is often painful and scary.[23] According to Helfer, the nature of our early relationships greatly

influences the course of relationships to come, and the perinatal period offers an excellent opportunity to encourage positive relationships. All activities are focused on the mother and on the birth of the child. Motivation for learning parenting skills is at its height, and parent-infant accessibility is a built-in feature. These factors linked together permit instruction at a critically sensitive time. Helfer has personally assisted with implementation of his Perinatal Coaching Program in two Michigan hospitals, but they have not been without their problems. He has travelled extensively in the interest of encouraging other health practitioners to investigate the beneficial aspects of perinatal bonding. Professionals in the Fairbanks community benefitted from his visit in 1980, when he presented a training workshop on behalf of the Resource Center for Parents and Children.

As designed, the Perinatal Coaching Program utilizes volunteers who are selected on the basis of their patience and sensitivity, willingness to help, time available, and personally successful interactive experiences in their own home. These volunteers are an effective replacement of a phenomenon that used to exist in our society through the extended family, which is often not available as a resource for information and support in our society today. Six to eight hours of training and supervision is required before volunteers are assigned to a first-time family. Programs can be very flexible, and can be based in a hospital, a doctor's office/clinic, or in a community resource agency. Coaches initiate contact with the requesting family in the eighth or ninth month of pregnancy. The purpose of this first visit is to establish rapport, orient the couple to the goals of the program, and begin teaching in the three basic content areas: (1) an infant's sensory capabilities; (2) states of infant consciousness; and (3) a baby's unique individual qualities. The next family contact ideally should take place in the labor room, where the father is instructed in techniques

for bonding with the mother. Bonding of mother-father during the course of labor greatly enhances the potential mother-infant bond after birth. Because of hospital policies, the visit in the labor/delivery area is often not possible, and satisfactory adjustments to the program can be made. Of primary importance during the second contact is the teaching and modeling of interactive skills in the first 12-24 hours after birth, preferrably in the hospital setting. The third and final visit is made by the coach a few days after the new family is settled at home, to encourage and support continued interaction. At this time, it is possible to ascertain whether the family is in need of additional assistance from other community resources, and referral can then be made for financial and/or support services.

Although the program has undergone structural change based on community reception and need, the primary purpose remains the same, to improve intrafamily relationships through bonding in the perinatal period. Experimental research by Robson and Moss in the 1960's showed that "most mothers experienced impersonal feelings of affection toward their infants for the first four to six weeks following delivery. Babies, they observed, began to be viewed as a person around the second month when they began to smile and show more visual fixation. At this time, maternal feelings toward their infant are also intensified".[25] The Perinatal Coaching Program attempts to accelerate this interactive process, and Helfer deserves recognition for stimulating both awareness and controversy through his concern for early parent-infant relations.

Prior to the 1960's, the infant was not given credit for contributing substantially to early social interaction. But in 1963, Mary Ainsworth wrote: "One feature of attachment behavior that struck me especially was the extent to which the infant himself takes the initiative in seeking an interaction..."[6] The previously held notion

was that infants were asocial at birth, that they were taught social skills, and only by tuition did they acquire the "knowledge, skills and dispositions that enabled them to participate as more or less effective members of groups and the society".[32] Behaviorists, such as Bandura, still viewed socialization as a one-way process, with the parents shaping the child's behavior. "Modeling" was in the forefront as a chief influential shaping factor, fueling the controversy over the infant's innate social capabilities.

The socialization studies of Harriet Rheingold and the Mahler group focused on infant behavior as modified by the social encounters of the infant. They proposed that the infant gains knowledge and perfects his skills through the social process, and to this extent, he too is socialized. In other words, both parents and infant operate within a system of mutuality where the behavior of one produces an effect on the other, that in turn modify the behavior of the first. Most social interactions are based on this alternation of roles, and the successful establishment of this interpersonal synchrony is still seen as one of the primary tasks of early infant development.[32] The subsequent attachment bond is the means by which the adult acquires the power to teach the infant the social ways of his culture. Further studies related to socialization documented the biological origins of infant social behavior, and chronological social development:

1-6 weeks: normal autistic phase; individual infant elicits response from mother in a unique way.

2 months: beginning of symbiotic phase; full-flowering of social smile; tremendous "hooking" power of infant to draw parent into social relationship.

2-3 mos: infant anticipates pleasure and responds with anticipation.

3 months: parent-infant synchrony at its height; infant throws out many cues, and mother picks up on certain ones; infant adjusts cues accordingly.

5 months: parent-child interaction is set; infant ventures

in outside world; becomes very "affective"; inanimate world takes on new meaning.(hatching)

7 months: fully "hatched".(can relate to world outside of human interaction, and begins to seek that)

8 months: "customs inspection" of strangers and reactions; exuberant pleasure upon reunion with mother.

15-21 mos: "ambitendency" develops, a precursor to ambivalence; times of independence, willfulness, self-assertion.

Attachment studies continued to focus on socialization of parent and infant in the early '70's, and it became an accepted fact that the infant's contribution cannot be separated from the parent's when the dyad is studied in real life situations. There is a built-in system that both mother and infant bring to the attachment process. In addition, newborn infants have organized capabilities for initiating, maintaining and terminating interactions with others through a signalling system. The parents' sensitivity to these signals is an area that was addressed by Dr. T. Berry Brazelton at Boston Children's Hospital Medical Center in the early '70's. Years of observations are the basis for his books on parent-child relationships, of which attachment is a prime ingredient. Parent-child attachment, according to Brazelton, is a "delicate balance between feelings of frustration, anger and defeat, and feelings of pride, joy and success". He states further "that this balance is learned through parenting; through experiencing parenting failures and parenting successes, all with the maturity and knowledge that lets us know that the infant is growing and changing, as are we as parents."[10] Brazelton's position was contrary to the "critical time" theory of the 40's and 50's, and set the stage for an era of challenging work by researchers, practitioners and others interested in the development of social relationships.

Brazelton also encouraged parents to be less concerned about "spoiling" the infant in the first year of life, and recognize the value of close tactile contacts ....

holding and cuddling... which have great significance for the infant's feeling of trust and confidence, and for initmacy with the mother.

In 1973, Brazelton developed a Neonatal Assessment Scale for the purpose of assessing the subtle behavioral responses (and signalling devices) of a newborn infant. Accurate scoring of the twenty-seven behavioral items by persons trained in the techniques is thought to be an indicator of the infant's capacity for interaction, both with his parents and with the environment.[9] The value of this assessment tool lies in being able to communicate to the mother some of the individual characteristics of her newborn infant, with the goal of promoting sensitive parenting and feelings of success. Predicting the future behavior and potential of an infant can also serve to foster parent-infant synchrony and subsequent attachment. It was recognized that a great deal of variation is possible from one parent-infant dyad to another in the way the early attachment relationship develops. This variation is possible because of the unique inborn characteristics of each infant which are part of a pre-existing organization. Brazelton has also stressed the importance f the father's role in the development of attachment and subsequent family relationships. Fathers do not differ from mothers in (1) sensitivity to their infant's signals, (2) skillfulness in holding the infant in a comfortable position, or (3) success in infant feeding, and, further, it is in the area of play that fathers come into their own. Their contribution is invaluable. Brazelton insists on seeing both the mother and father together in his office for one visit prior to the birth of the baby. He draws the father into the conversation, eliciting concerns and validating paternal feelings. He thus cememts the relationship with both parents, and is able to foster positive feelings for

mutual involvement in child care. He also encourages the father in his supportive role of the mother, as she vacillates between her responsibilities to him as a mate, and to the infant as caretaker.

THE CONCEPT TODAY

Research prior to 1980 has verified that the neonate enters the world with innate competences, preadapted for social fittedness. More recent studies have focused on the social fittedness of parents, and that contribution to mother-infant attunement. The mother, in particular, exhibits numerous automatic behaviors which are beyond her awareness:

1. infant positioning for the"gaze"
2. exaggerated greetings
3. imitation of facial and vocal expressions
4. baby talk
5. repetitive interaction
6. musical quality of speech
7. interventions of "mock surprise"

Mothers of newborn infants seem predisposed to respond to certain stimuli, and frequent close contact with the infant stimulates maternal nurturant behavior. The infant, for his part, responds more readily to complex multi-dimensional sounds, such as that of the human voice, than to pure tones.[33] Vision also plays a significant role in the responsiveness of infants to humans. Reinforcing the impact of the infant gaze, eye to eye contact is as important in the development of social interchange as it seems to be for all adult communication. Routine caretaking does not necessarily invite the mutual gaze, which is generally present during social interaction. Thus, routine infant caretaking does not predispose attachment.

Both the sensory system and innate reflexive behaviors comprise a behavioral language, which is also referred to as the infant signalling system. One component of this system is the cry, which is a signal for social interaction. It is a communication to others of a need, and is a means of insuring survival. Infants, as part of their unique heritage, have a distinctive crying pattern, to which

resulting from several overloads. Mothers who constantly take the initiative are intrusive, and less sensitive to the infant's signals. Intrusive interaction often results in overloading, and thus asynchrony. It is thought to be one of the primary causes of autism. Not too many years ago, the Beatles sang a popular tune that aptly described this phenomenon: ".... one said hello, as the other said goodbye". This lack of synchrony leads to a feeling of helplessness which, in its extreme, can contribute to distortions of personality.[39]

It is obvious that persistent asynchrony in parent-child interaction results in less than optimal responsiveness, and often in irritability, physical manifestations (colic), and a breakdown in the ability to communicate. The infant becomes stressed and "tunes out", or removes himself from the situation through his autonomic system. Infant initiated cues to overloading and/or asynchrony are such things as: coughing, yawning, sneezing, hiccoughing, straining, sighing, twitching, startles, respiratory pauses, and even seizures. Many of these are observed when the infant state of consciousness is ignored in favor of impulsive or insensitive stimulation. In actuality, overloading or overstimulation is much more common than deprivation, and is just as detrimental. Synchrony can also be manifest in other aspects of maternal-infant interaction. One of the earliest interactive processes is cessation of infant crying by the parents' holding, talking, feeding or other means. The parent's nurturing abilities are reinforced when the infant quiets. Likewise, an infant gaze or smile invites verbal conversation; the smell of a freshly bathed infant invites holding; soft skin invites stroking. These are all cues which evoke interactive synchrony. The best signs of knowing whether synchrony has been achieved come from within the infant himself. He signals satisfaction, just as he signals distress. And he has an amazing capacity

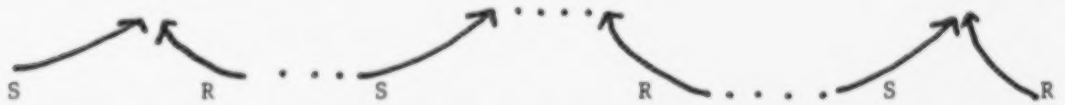
parents become attuned in the early weeks. Even at birth, the cry of hunger is distinguishable from the cry of pain.[30] The smile, like the cry, is also a social signal and thus a means of communication, though they remain independent and mutually exclusive. "The smile is the gem of the social realm, reinforcing and inviting social stimulation."[32] It is also said to be the first "organizer", and the forerunner of ego development.[40] The power of the infant's cry and the rewarding aspects of his smile, both recurrent and frequent within a day, are reinforcements for the daily caretaking of the infant, and invite social interaction. Another signal, or patterned behavior, is the infant suck. Consider the pattern: suck, suck, suck, suck, ... suck, suck, suck ..... suck,etc. The pause (....) is anticipatory of a social stimulus. Newborns are powerful evokers of speech. Their behavioral language invites social participation. But mere participation does not insure the development of healthy social relationships. Synchrony of communication is an important qualifying factor.

Synchrony implies that the infant is more than a mere recipient of mother's interaction; he attempts to modify, structure, mold and use her interaction to lead to a behavior. It is that behavior that causes the mother to structure a successive behavior. As the mother-infant dialogue takes shape, it reflects a reciprocal sensitivity. The resultant behavior is synchronous, rhythmical and smooth: (S = stimulus and R = response)

Behavioral synchrony such as this implies the biological predisposition of parent and infant to mesh their behaviors in social interaction; for the social flow to be intuitive and synchronous.

In comparison, the following diagram illustrates infant-object (such as toy or mobile) interaction, which is arhythmical and irregular:

Behavioral synchrony reinforces and maximizes attachment, which has obvious implications for future parent-child relationships. Two other factors which qualify synchrony are timing and intensity. Appropriate timing refers to the interval between stimulus and response, and might be diagrammed thus:

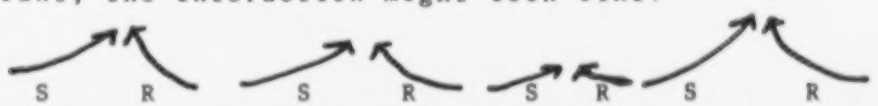


Pauses (.....) are important considerations in both stimu_lus and response.

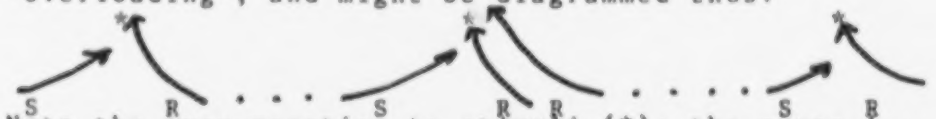
Inappropriate timing might be diagrammed thus:

Note that when a response is not forthcoming, as in *, the stimulus is rapidly repeated, and then negated, and out of synchrony.

Intensity implies strength, or duration of stimulus. When there is synchrony of intensity between parent and infant, the interaction might look like:



Asynchronous intensity is found in behavior which is termed "overloading", and might be diagrammed thus:



Note the over-reaction to stimuli (*); the pause (....) that results from overloading, and the diminished stimulus,

to self-regulate, and to renew interactive attempts time and time again. Fortunately, there is a bias in the central nervous system toward pleasureable experiences.[15] The integrity of the innate newborn interactive system is truly amazing.

AFFECTIVE DEVELOPMENT

Coupled with the specific mother-child relationship and directly dependent upon it, is the more general capacity to relate to others and to experience and express affect.[41] Affect is "emotional coloring", and refers to mental disposition as opposed to outward appearance. Affects are rooted in basic biological systems. Evolutionary history has shown that emotions emerged in primates for the purpose of promoting social interaction in group-living animals. Both emotional and social behaviors are controlled by the same neocortical areas in the forebrain, which explains their coexistent nature.[38] Social interactions stimulate emotions, which are relatively spontaneous and impulsive. Cumulative repetition of positive emotions leads to a sense of effectness, or wellbeing, and influences coping abilities. "Approaching" feelings, such as love and affection, are expressions of positive emotions, whereas negative emotions elicit bitterness, fear, hate, and other feelings of avoidance. Application of this to parent-child relationships results in a discussion of affectional and emotional relations, which become patterned early in life, and consequently set the mold for later intimate associations.

When does affective development begin? Where does it start? In the broadest sense, it could be at conception; but, most certainly, affective development begins in utero. It s beginnings can be found in the capacity to react in utero; to store, to shape, to be shaped by experience, and in turn, to shape the mother. From the time of birth, the inborn affective expressions of the infant provide messages for survival, as well as for loving and social bonding. Affect is the language of the baby. His emotions are interpreted as adaptive signalling (outward and inward), not disruptive, and they are the precursors of social relation-

ships. The functional role of emotions is as an amplifier, sending messages about the importance of what's going on now. In that respect, they actually trigger and guide caretaking. Thus, the infant is the organizer of the experience, and sends the signals. Ideally, there is a period of courtship following the birth of a baby, where mother and infant become synchronized with each others signals. The neonate and the parent learn about each other and about themselves within an interactive system. Most recently, emotional availability of the parent has extended to the parent trying to discern how she would feel in the infant's situation. This is an important extension of emotional availability, and certainly enhances the degree of attachment. At birth, and even prenatally, the infant takes in information and uses motor, cognitive, and social resources in expression of affect. Throughout the early developmental stages there are major times of shift in affective, social reorganization. These occur at two months, with the "flowering " of the smile; at 7-9 months, with attention to the world outside of himself; at 12-13 months, with the "elation" of the one-year old, as he discovers his capacity for exploration; and at 18-21 months, with the development of "willfullness". These various stages represent affective changes that consolidate personality development. Affective awareness develops about the same time as self-awareness, between 15-21 months of age, as evidenced by a child's perception of changes in facial expression.

There is a universal patterning of affect which can be interpreted in all cultures. This includes the facial expressions of fear, disgust, anger, joy, surprise, sadness and interest, which form the biological basis for emotional expression and recognition. This is the core of affective development, and of self-experience. Despite all the changes throughout life, it is the affective life which

allows a person to know that he is the same person..... has the same unique core.[15] It is this which gives continuity to our experience in spite of the many developmental changes. The early interaction that takes place between an infant's finely tuned system and a parent's sensitivity results in a basic interactive core, which may range from social maturity and ease in communication to imbalance and immaturity.[40]

There is thought to be a strong inborn mechanism that keeps specific mothers and infants in close proximity, and forms the basis for attachment. However, as has been discussed, mere availability of the parent is not sufficient for proper development of the child. Emotional availability is a requirement. Throughout life, emotional responses are modified by emotional behavior, and vice versa. This becomes particularly important under certain conditions, where infant signals are weak or non-existent. For instance, in the premature infant, depending on the degree of prematurity, affect is not fully developed. Consequently, signals are harder to read and responses are harder to anticipate. The high cry of a premature infant can be an abrasive signal, and elicit an insensitive response. Parents need support and education in adjusting their expectations, and in maximizing the potential of interactive opportunities. Likewise, in the case of infant retardation, parents need supportive education. These infants often exhibit gaze aversion, and negate the potential to initiate interaction. Consequently, a mother might feel rejected, or might not persevere in her attempts to elicit responses, thus diminishing the level of communication. This can have habitual consequences. Fortunately, infants (and human beings of all ages) have the innate tendency to "move back on track", despite delays due to such things as illness, prematurity, or other deviations from the norm. This is part of self-regulation, and development remains goal oriented. So, a sensitive parent can, with supportive

education, elicit responses from the infant, and overcome many of the obstacles to normal developmental attachment

Though former studies on the effects of malnutrition focused on the cognitive development of the child, more recent studies are concerned with emotional development. Caloric intake (as opposed to proteins, minerals, etc.) has more effect on behavioral change than any other nutritional variable. And a positive home environment improves behavioral, but not emotional development.[3] The results of eight studies showed the following emotional-social disturbances related to early malnutrition:

1. distractable, wandering behavior
2. increased anger, decreased compliance
3. decreased frustration tolerance
4. decreased motivation for activity
5. decreased social interaction, which affected later social relationships, and resulted in lowered self-esteem.

These interactive behaviors are seen as essentially irreversible, with some qualification.[4]

Mothers with low self-esteem have difficulty visualizing themselves as competent, and consequently interpret the infant's signals as reinforcement of that incompetency. Because they lack the sensitivity necessary for a nurturant response, intrusion and overloading often occur, with resulting asynchrony. This results in a further lowering of self-esteem as the infant fails to respond appropriately. It is important to identify the mother's potential strengths, and stress the infant's need for nurturant interaction. It is also helpful to identify the infant's weaknesses, and thus share the realities of a stressed baby. If the mother can see some of the deficits as belonging to the infant, and recognize the infant's increased need for nurturance, her level of competence may be raised.

It should be stressed that the results of research are generally a comparison of normative versus emotional defect extremes. There are qualitative differences all through. But, basically, the following characteristics are found

to varying degrees in children from disruptive families, where interactive communication was compromised in the early formative months and years. The children tend to:

1. be overly emotional
2. take longer to return to equilibrium
3. avoid seeking reassurance from parent
4. have less positive peer association
5. lack resilience
6. be hyperaggressive
7. have difficulty with intimacy; they yearn for closeness with objects, rather than people. [36]

One explanation for qualitative differences in deviance is the inborn unique "individuation" of each child. Another explanation is based on a societal pattern: the infant who indicates need for additional support gets it, from extended family, supportive friends/acquaintances, and even from agencies. The mother may be less able to signal need, and consequently receives less supportive help. Her concerns are not heard, and if heard, are often not sensitively responded to. This is an area that warrants further attention in the future study of parent-child relationships.

A disorder in affective development interferes with the task of that particular phase, and if not identified and dealt with, can interfere with adaptability to transition into the next phase. The degree to which the child becomes a well-organized self-system is dependent to a large extent on the architect ----the parent. And if a child has grown up as part of an organized affective system, he will strive to maintain that system throughout his life-span.

ATTACHMENT

It is during the first six months of life that infants develop many of the elements of attachment. This is often when parents become confused about the "spoiling" issue, because the infant's crying and smiling become increasingly associated with the presence of another human being. But studies have shown that the degree of parent-child attachment is directly related to the quality of parent-child interaction, from birth through adolescence. This has implications for the future physical, emotional, cognitive and social development of the child. Both mother and infant make substantial contributions to the pattern of attachment, relying on behaviors that are both instinctive and learned, one dependent on the other. Though the attachment bond is recognized as having inherent characteristics, its quality is influenced by mutual signalling and mutual gratification. Four interrelated dimensions of attachment have been identified by researchers:

1. sensitivity - insensitivity, dealing with the parent's ability to respond to the infant's signals and communications.
2. acceptance - rejection, which refers to a parent's recognition and acceptance of his/her own feelings.
3. cooperation - interference, referring to a parent's capacity to control impulsive interruptive behavior out of respect for an infant's autonomy.
4. accessibility - ignoring, which deals with a parent being tuned in to an infant's state of being versus personal preoccupation.

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In addition, the mother's sociability and her ability to express positive emotions have a reinforcing effect on the attachment process. Still another consideration is her ability to comfort the infant in times of distress. This provides the infant with a sense of "control".... that he can signal distress and be heard, and can thus remain comfortable in an unfamiliar situation.

As has been implied, attachment refers to quality, not "if". It is present to some degree in all parent-infant relationships, depending on the mother's awareness, her ability to interpret signals, and her willingness to respond appropriately. Though it has been recognized that a warm, intimate and continuous relationship with the mother is extremely beneficial in the immediate postnatal period, absence of early attachment does not preclude the formation of an affectionate bond. Given the proper encouragement and teaching of skills, a parent and infant can certainly compensate, even if their bonding has been postponed by separation. These separations are often unavoidable in cases of extreme prematurity, or when there is an acute medical problem in the mother or infant. At the same time, there is nothing to indicate any biological need for an exclusive primary bond (the bond between mother and infant). Some secondary (father/other)bonds develop strongly from circumstances that are similar to those of the primary bond: (1) shared dyadic relationship with wife; (2) shared experience of wife's pregnancy and labor; and (3) positive feelings for mutual involvement in child care. Grandparents, siblings, and even neighbors can establish an attachment. An infant is not confined to just one bond.[34] And neither a mother's responsibility for an infant's physical care nor her constant availability can guarantee the strength of the attachment. The person a child chooses to bond with depends on the individual's interactive behavior and on other subtle qualities. The point of emphasis is that attachment has profound social and physical implications for the subsequent development of the individual. The capacity to care and feel deeply about others may be potentially available to every child, but if not elicited and sustained in early infancy, the ability to form interpersonal relationships throughout life may be hampered.

There are three additional and somewhat overlapping conditions which affect the strength of the parent-infant attachment. One is continuity, described as the parent's availability during the perinatal period —— not only presence, but time ——— sufficient to allow for repetition of the parent-child interactions. Second is stability of the environment which supports the potential of both the parent and child to engage in the bonding process. Deterrents to this condition might be severe stress in the mother, parent-infant separation due to any one of numerous possible causes, congenital malformations, or inconsistent care due to depression or addictions. The third condition affecting attachment is mutuality, or the co-existence of supportive and reinforcing interactions between parent and child.[26] Though maladaptive attachment is qualitative, there are two general patterns which have been identified:

1. anxious/resistant infants show a tendency to avoid exploration. They are timid and wary, despite the parent's presence. They typically are extremely upset by separation, but, more striking, they have great difficulty adjusting to reunion, and often show explicit anger. Later on, in the preschool setting, these children are observed to be emotionally dependent on teachers, and are unable to establish peer relationships. Other observations of this group of children show that they are either impulsive, immature and unskilled or passive, timid and shy. They are often embroiled in battles with the parent as an end in itself; the goals are forgotten.

2. anxious/avoidant infants refuse contact with parents following brief separations; they either turn away from welcoming gestures, or simply ignore them. As with the anxious/resistant group, these children are observed to be highly dependent on their preschool teachers, and are also incompetent with their peers. These children are angry and tend to be hostile toward others or emotionally isolated. They are more passively compliant.[36] They do not persist in tackling difficult problems, and do not have the capacity to entertain themselves. With the anxious/avoidant pattern, the mother generally was found to be insensitive to signals and avoided the child's reach of need for help. This is often the case with alcoholic mothers. The quality of care is disorganized and unreliable.

In comparison, the securely attached infant is the one whose mother is appropriately sensitive and responsive to the infant's signals. She allows infant autonomy. Her presence can serve as a secure base from which the infant is more likely to cope with strange or unpredictable events by deciding in favor of interest or exploration. Dramatic differences are seen in affect, with the securely attached infant exhibiting enthusiasm, persistence, and compliance. The child also seeks close proximity with the mother. Though there may be distress on separation, there is joy and relief on reunion. The child's hearing, vision and actions are oriented toward the mother. And the mother is successful in her attempts to comfort the child. Interestingly, in earlier (1960's) studies by Klaus and Kennell, it was demonstrated that mothers who had the opportunity to develop a secure attachment were observed in the pediatric office to: (1) stand closer to their infant; (2) pick up the crying infant more often; (3) fondle the infant during feedings; (4) were reportedly more reluctant to leave the infant with other caretakers; and (5) thought about the infant constantly while away from the home, even temporarily.[31] Their data also reveal positive changes in communication, even five years after the birth of the child.

The value of parent-infant attachment cannot be overestimated, and the benefits to the infant have been documented. But there are reciprocal advantages, related to self-esteem and interfamily relationships. Attachment "is a process as deliberate as growth and development, exceeding every parent's expectations with proper nurturance".[10] Recent research in the field of attachment has expanded the definition to include "a readiness for learning". It is common knowledge that an infant is born not only into an environment of interpersonal relationships, but also into a culture. Attachment endows the parent with the power to teach the infant about conforming to society's expectations, and about the social ways of his culture.[32]

The extreme importance of attachment to subsequent development is still a controversial issue today. Recent work with impoverished families displaying various levels of stress and instability has indicated that change is possible in infant's attachments. "The findings (Vaughn) suggest that early attachment patterns do not necessarily become permanent characteristics. If important aspects of their life change, the children can shift from secure to insecure attachments, or vice versa."[30] Other factors must be taken into consideration in order to adequately answer further questions posed by research:

1. Is the child's current pattern of social development more indicative of the quality of the current parent-child relationship?
2. Are some children inherently more socially adaptable, regardless of early relationships?
3. Are maladjustments that are thought to be related to early parenting practices irrevocable?
4. To what extent are parental thoughts and conflicts transmitted to the child, thus interfering with the attachment process?

Certainly, parental "fantasies" give shape and meaning to all aspects of interaction. But they are merely one factor that influences the developing relationship. Other influential factors are such things as: the parents' past experience; their preferred mode of relationships, particularly with their own parents; the pregnancy and delivery experiences; and the infant's individual unique characteristics. It becomes increasingly apparent that the mother is not all-responsible for the quality of the attachment, and, more important, mistakes in parental handling and judgement are no longer seen as irrevocable.

IMPLICATIONS FOR THE '80's

The '70's were an era of social change; the trend for the '80's will be toward excellence.[29] Family relationships are in vogue and mothers, concerned with conscientious parenting, will be seeking prime time with their infants. Thanks to media and more formal means of education, parents are more intelligently informed in matters relating to newborns and their potential for eliciting relationships. Researchers will be continuing to study responses and capabilities of the unborn fetus, in order to better understand the capacities of the newborn. The value of such research is two-fold: to obtain clinical information which may be valuable in the prevention of defects and illness; and to promote positive parenting experiences which will be reflected in the social adaptability of coming generations. Parenthood itself will be treated more sensitively as a developmental phase of the life-cycle, with self-fullfillment being achieved through successful infant interaction. Psychodynamically, the mother, through re-experiencing and identification, gives to herself as she gives to her infant.[38] If she has been rewarded by her infant's behavior, she is more likely to feel better about herself, both as a person and as a fullfilled parent... and will continue giving in a rewarding manner. In reciprocal fashion, the infant, having received from the parent, is more apt to give; haveing experienced rewards, is more apt to be rewarding; and after having predictably good experiences (which develops a sense of basic trust) an infant is more predictable, less fussy, and more exploratory. Thus, when interaction between the dyad runs smoothly, both parent and infant derive satisfaction. This satisfaction is now seen as a biologically -based reward system which subsequently shapes behavior. Research in the '80's

will continue to pursue this "shaping" behavior of infants, with the goal of increasing the potential for responsible and enjoyable parenting.

Recent studies attest to the fact that intrafamily relationships in the early years of a child's life bear more heavily on a child's behavior than education, social status, or other advantages; the emotional atmosphere communicates itself to the child. With both divorce and cohabitation acceptable family choices in this decade, more and more children will be raised in single-parent families. This factor alone will increase the importance of educational and supportive intervention.

In the past twenty-five years, violence has become a pervasive and destructive force both in and out of the home, with serious social consequences. The '80's will necessarily focus on prevention, through the provision of quality services. Federal, state, community and private financing will be solicited for preventive education and intervention programs, aimed at eliminating violence. With programs focusing on improving and sustaining family relationships, it is predictable that the next generation of children will be more sociable, more self-directed, and have better self-concepts.

The '80's are very conflicting times. The medical profession is in the middle of a phenomenon that is changing so quickly that the current research is outdated before it is applied. And parents, feeling manipulated and out of control, are increasing their demands to become autonomous, and be involved in the decisions that directly effect the delivery of health care. But conflict arises as hospitals face restructuring of services and renovation of facilities to meet the demands of the present generation. Nursing staff, in particular, are having to give up much of their

former caretaking roles, and are being forced to share those caretaking responsibilities with parents. If interactive problems develop between mother and infant, the hospital staff often is the focus for blame. Physicians who are establishing new practices are entering an interactive system, and will experience a conjoint model of doctoring. No longer will they find medical practice to be totally pathogenic; there is a concern for intrafamily interaction and ensuing relationships. Social expectations for fathers have increased, which has affected social policy. Emphasis is on an affinity system, rather than attachment per se. Concern with an infant's need for arousal has surpassed the concern for security. This shift has emerged partly as a direct consequence of the move for equality of women. But it has also been influenced by a nationwide concern for the violence and irresponsible dependency (ie: drugs, alcohol) of our youth.

Child abuse remains a complex problem. It's causes are numerous. No single program will solve the problem; but community coordinated programs could prove measureably successful. Not only medical and social, but educational institutions are going to have to assume some responsibility. We have not seized upon the opportunity to prepare our young people for their roles as parents. Preparation obviously begins at home, but parenting curriculums need to be written for all grade levels. Their sensitive implementation will serve to reinforce positive skills, and promote change where necessary. Responsible education can also influence the decision to become a parent, and indirectly benefit future generations.

The childbirth education groups have illuminated the need for education related to childbirth, and have taken steps to make that education widely available prenatally. Hospitals have made tremendous strides in providing the best technology modern medicine has to offer. Physicians and

nurses receive continuing education to assist in the delivery of modern health care. Yet it makes little sense to provide excellent prenatal, obstetrical, and neonatal pediatric care, and then abandon young families at the hospital door without educational support in the art of parenting. These skills don't just happen.... they must be taught. The preventive health care system must not overlook this opportunity. It is imperative that providers of family health care begin to weigh the advantages of supportive and educational intervention. It must be merged with clinical practice. It must be widely available in every community, crossing cultural, financial, educational, motivational, and social barriers. Only in this way can we hope to alter parental attitudes, particularly those attitudes known to be related to child abuse and neglect. Preventive intervention makes a difference at all age levels. The possibilities for change are limitless, given the many layers and options for entry into the parent-child interactive system.[14] Intervention does not necessarily imply that something is wrong. Nor is it an assault on human dignity, or a criticism of natural parenting ability; it is motivated by a desire to help and improve. When tne natural and spontaneous match between parent and child fails to occur, the result is a potentially high-risk relationship. The ensuing difficulties lie between the two, not within them. Effective and useful prevention begins by helping in the "now", so that families can increase their current options, and overcome risk and predictability.

Intervention by volunteers is not a new concept. Many programs committed to the prevention of child abuse and neglect have used volunteer "parent aides" with varying success, to provide friendship and support to identified "at risk" families since the mid '60's. These programs are not without their problems. Heavy turn-over, burn-out,

and inadequate funding are but a few of the factors that have affected the success of conscientious endeavors. Home-based programs are constantly being revised, to better meet the needs of the people they serve. Some considerations in designing programs are as follows:

1. duration of contact makes little difference in measureable change.
2. the support systems a family can bring to an intervention program have an important impact on the success of the program for that dyad.
3. heterogeneity of participants, such as visitor uniqueness, family characteristics, setting, mood, and "synchrony" or "fit".
4. family characteristics, such as economic and social resources, number of children, father participation, mother employment, mother well-being, and match.

Several studies have shown that home-based visiting programs affect mother's use of a more effective teaching style. More elaborate language was used, with more attention being paid to infant cues. There was an increase in positive reinforcement of behaviors, and more positively toned play interactions. This parenting style had a direct bearing on Bayley or Stanford-Binet scores. In addition, the following behavior traits were found to be affected by intervention:

1. responsible independence
2. social cooperation and prosocial behavior
3. cognitively related skills
4. emotional stability
5. task orientation
6. self-esteem
7. quality of attachment
8. appropriate emotional expression
9. motivation
10. problem-solving skills

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It should be reiterated that child and parent reciprocally influence each other. Though research is continually providing new insights into the influences of intervention on development, the most effective interactions to date focus on enhancing language development; ie: encouraging

the mother/infant and mother/child to communicate verbally during their interaction. This language focus can contribute immeasureably to the child's development of intellectual skills, as well as promoting the sharing of needs and feelings. Though intervention programs have similarly directed their attention toward the mother and her relationships, it must be remembered that her relationship is embedded within the social system of the family; it's friends, neighbors, relatives; it's interacting institutions, educational, work, preschool; and it's culture. Intervention in one sphere may have unanticipated consequences in another. Specific goals for an intervention program are to (1) increase strengths, (2) remediate deficits, and (3) shore up possible weaknesses, with consideration for ethnic and personal values. It is imperative that any proposed changes are in line with the aspirations and goals of the parent. Care must also be taken not to induce undesirable side-effects, such as dependence, or overriding feelings of guilt and helplessness. And, what consequences are anticipated beyond the intervention? Caution must be used so as not to undermine the parent's attempt to use her own personal or network resources, or diminish her ability to do her own problem solving.

Program evaluations have documented that families (1) drop out, (2) stay the same, (3) improve, and (4) some are even harmed. The statistics are inconclusive and premature. But designers of programs ought not to be discouraged, nor overcome by the emotionalism of the parent-child issue. The '80's will be a fertile time for sowing seeds, and the harvest will be bountiful. Indeed, ours is a life of relationships, and the parent-child relationship that fosters a strong attachment bond clearly has survival power.

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